

REMARKS

Reconsideration of the present application, as amended, is respectfully requested. Claims 8-13 and 18-42 of the present application are currently pending. In the accompanying amendment, new claims 18-42 have been added.

Claim Rejections – 35 USC § 102/103

The Examiner rejected claims 1, 3-4, and -7 under 35 USC § 102(b) as being anticipated by McConnell et al. (US 4,899,767). The Examiner rejected claim 1 under 35 USC § 103(a) as being unpatentable over Ryu (US 5,346,302). The Examiner also rejected claims 2, 5-6, and 17 under 35 U.S.C. 103(a) as being unpatentable over McConnell et al. (US 4,899,767). Applicant has canceled claims 1-7, and 17. Applicant has added new claims 18-42 to more particularly point and distinctly claim the subject matter which, Applicant regards as the invention.

In view of the foregoing, it is respectfully submitted that the claims are now in condition for allowance, which action is earnestly solicited.

Claim 18

With respect to claim 18, claim 18 depends on independent claim 11, which has been allowed, and thus places claim 18 in condition for allowance.

Claims 19-31

With respect to claims 19-31, new claims 19, 23, and 26 are the independent claims from which claims 20-22, 24-25, and 27-31 depend, and which teach a method of generating a measured amount of a chemical by flowing a chemical into a valve system having a tube with a

known volume, filling said tube to generate a measured amount of chemical, which is approximately equal to the known volume of the tube, and then applying said measured amount of chemical to a semiconductor wafer in a cleaning or etching process. The prior art of record fails to teach at least the limitation that the volume of the tube **equals** the measured amount used in a single wafer process. It is asserted that McConnell et al. teaches filling a tube, and that any tube has a known volume, and thus constitutes a measured amount. McConnell et al. fails because the measured amount of chemical that is used in McConnell's wafer process is **not equal** to the measured amount previously defined by the known volume of the tube, and thus, the two measured amounts are not equivalent. Nor is there any reasonable expectation that McConnell et al. ever intended to make the two measured amounts equivalent, since McConnell et al. uses a metering pump to generate the desired measured amount used in their wafer process.

Similarly, Ryu also fails to teach claimed invention because it teaches a tube that is not **completely filled**, nor is the volume of the tube **equal** to the measured amount of chemical because Ryu uses level sensors in the tube to generate the desired measured amount, see fig.2, elements A and C. The use of such level sensors also precludes any reasonable expectation that Ryu intended to anticipate the claimed invention.

Both McConnell et al. and Ryu fail to teach that the measured amount of chemical generated by a full tube is the same amount of measured chemical used in the same single wafer process, and therefore, new independent claims 19, 23, and 26 are believed to be allowable. Consequently, dependent claims 20-22, 24-25, and 27-31, which depend on claims 19, 23, and 26, would also be allowable. Applicant respectfully seeks an early allowance of these claims.

Claims 32-38

With respect to claims 32-38, new claim 32 is the independent claim upon which claims 33-38 depend, and which teaches flowing a first and second chemical into a first and second valve system having a first and second tube, respectively, completely filling said first and second tubes to generate a first and second measured amount of chemical, which is later mixed together.

McConnell et al. fails to teach filling two tubes to generate two measured amounts for mixing.

Ryu fails to also teach the claimed invention because Ryu uses level sensors to determine the measured amount of chemical. Further, both McConnell et al. and Ryu are drawn to a single valve system with only a single measured amount of chemicals. Therefore, it is believed that independent claim 32 is allowable, thus dependent claims 33-38 would also be allowable.

Applicant respectfully seeks an early allowance of these claims.

Claims 39-42

With respect to claims 39-42, new claim 39 is the independent claim upon which claims 40-42 depend, and which teaches flowing a first chemical into a valve system having a first tube of a known volume and completely filling said first tube with said first chemical to generate a measured amount of said first chemical; flowing a second chemical through a flow control valve and split into both the valve system and into a first control valve, wherein the second chemical pushes said measured amount of said first chemical, from the valve system, to generate a first chemical mixture, that feeds into a second control valve; and mixing said first chemical mixture from the second control valve and said second chemical from the said first control valve. Both McConnell et al. and Ryu fail to teach completely filling a tube to generate a measured amount of first chemical, nor the use of a flow control valve, nor splitting the flow of the second chemical, nor generating a first chemical mixture which feeds into a second control valve.

Therefore, it is believed that independent claim 39 is allowable, thus dependent claims 40-42 would also be allowable. Applicant respectfully seeks an early allowance of these claims.

Allowable Subject Matter

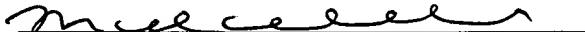
Applicants appreciate the Examiner's indication of allowability of Claims 8-13 for reasons discussed in section 3 of the Final Office Action mailed November 26, 2004.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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